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10/580,743

05/26/2006

Hermann Klingels

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EXAMINER

KIM, TAE JUN

ART UNIT

PAPER NUMBER

3746

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02/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/580,743 | Applicant(s) KLINGELS, HERMANN | |
| | Examiner Ted Kim | Art Unit 3746 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-38 is/are pending in the application.
- 4a) Of the above claim(s) 36-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 21-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/26/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Claims 36-38 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/26/2007.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-35 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: in claim 21 “an electrical power generator *generating electrical power from the shaft and from compressed air drawn from the high-pressure compressor*” lacks any kind of structural relationship to accomplish these functions. Note that there are no structural connective elements claimed, such as a gear, to accomplish the connection to the shaft and there is no air turbine to generate the power from the compressed air. An electrical generator clearly cannot generate power from compressed air by itself and applicant’s functional language is not possible to be achieved by the limited structure in the claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 21, 25-29, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schutze (4,077,202) in view of Coffinberry (5,143,329). Schutze teaches a gas turbine, comprising a core engine 1 including a compressor and a shaft connected thereto for driving said compressor; an electrical power generator 7 generating electrical power from the shaft and from compressed air drawn from the compressor; wherein the electrical power generator generates electrical power in a high load range of the core engine exclusively from mechanical shaft power drawn from the core engine via the shaft (note that both the air turbine 12 and gas turbine 5 are shut down after start, see col. 4, lines 8-36) and only the shaft 2 generates electricity; wherein the electrical power generator generates electrical power in a lower load range of the core engine from the mechanical shaft power drawn from the core engine via the shaft 2 and from pneumatic energy contained in the compressed air 16; further comprising a controller (inherent), wherein the controller, as a function of the load range of the core engine, automatically connects or disconnects the electrical power generator from the compressed air; wherein the electrical power generator includes a first generator 7 connected to the shaft via a first gear 9, the first generator generating electrical power from the mechanical shaft power

drawn from the core engine via the shaft; wherein the electrical power generator 7 is connected to the shaft 2 via a gear 9, the electrical power generator generating electrical power from the mechanical shaft power drawn from the core engine via the shaft 2.

Schutze does not teach the compressed air is from the high pressure compressor of the core engine as he does not disclose the details of the engine nor the compressor configuration. Coffinberry is cited to show that it is old and well known in the art to employ a core engine having a high pressure compressor 20 with compressed air 56 (Fig. 1) drawn from the high pressure compressor, the high pressure compressed air used to drive the air turbine 50 connected to a gearbox 48 and accessories 62. It would have been obvious to one of ordinary skill in the art to employ the compressed air from the high pressure compressor of a gas turbine core engine, as taught, by Coffinberry, as a conventional engine location and engine configuration used in the art for producing the compressed air used to drive an air turbine. It is noted that the electric controller was regarded as inherent, alternately using a controller to automate such functions is highly conventional in the aircraft art and would have been obvious to do to automate the requisite functions and/or reduce pilot error.

2. Claims 21, 25-29, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hield (5,694,765) in view of Coffinberry (5,143,329). Hield teaches a gas turbine (see Fig. 8), comprising a core engine including a compressor 34 and a shaft 46 connected thereto for driving said compressor; an electrical power generator 202

connected to 44 (see Fig. 6) generating electrical power from the shaft and from compressed air 234 drawn from the compressor 28; wherein the electrical power generator generates electrical power in a high load range of the core engine exclusively from mechanical shaft power drawn from the core engine via the shaft (col. 8, lines 51+); wherein the electrical power generator generates electrical power in a lower load range of the core engine from the mechanical shaft power drawn from the core engine via the shaft 46 and from pneumatic energy contained in the compressed air 234; further comprising a controller (210, Fig. 6), wherein the controller, as a function of the load range of the core engine, automatically connects or disconnects the electrical power generator from the compressed air; wherein the electrical power generator includes a first generator 202 connected to the shaft via a first gear 44, the first generator 202 generating electrical power from the mechanical shaft power drawn from the core engine via the shaft; wherein the electrical power generator 202 is connected to the shaft 38 via a gear 44, the electrical power generator generating electrical power from the mechanical shaft power drawn from the core engine via the shaft 40, 46, 38. Schutze teaches using compressed air from the low pressure compressor 28 rather than from the high pressure compressor of the core engine. Coffinberry is cited to show that it is old and well known in the art to employ a core engine having a high pressure compressor 20 with compressed air 56 (Fig. 1) drawn from the high pressure compressor, the high pressure compressed air used to drive the air turbine 50 connected to a gearbox 48 and accessories 62. It would have been

obvious to one of ordinary skill in the art to employ the compressed air from the high pressure compressor of a gas turbine core engine, as taught, by Coffinberry, as a equivalent engine location used in the art for producing the compressed air used to drive an air turbine.

3. Claims 21-32, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schutze (4,077,202) in view of Coffinberry (5,143,329), as applied above, and further in view of Lampe (5,174,109). Schutze teaches various aspects of the claimed invention but uses only one electric generator rather than a first and second generator. Lampe teaches an auxiliary power system where the APU 12 drives both a first generator 28 and a second generator 22 which produce greater amounts of electricity and/or allows for selective operation of a generator than a single generator. Furthermore, in the time since Schutze 1978 patent, the aircraft electric demands have substantially increased with greater use of electronics onboard the aircraft for the pilot and passengers. It would have been obvious to one of ordinary skill in the art to employ a first and second generator on the gearbox of Schutze, as taught by Lampe, to produce greater amounts of electricity and/or selective operation of the generators. For instance, the additional generator can be placed on the same shaft as pump 6 of Schutze and thus be designated the first generator. The first generator is connected to the shaft via a gear 11, the first generator generating electrical power from the mechanical shaft power drawn from the core engine via the shaft; wherein the second generator 7 is connected to an air turbine 12 via a gear 9, the air

turbine 12 generating mechanical power from the compressed air, and the second generator 12 generating electrical power from the mechanical power generated by the air turbine. The electrical power generator further includes first generator on shaft of 6 with first gear 10 and a second generator 7 connected to an air turbine 12 via a second gear 9, the air turbine 12 generating mechanical power from the compressed air, and the second generator 7 generating electrical power from the mechanical power generated by the air turbine; further comprising a freewheel/override clutch 14 assigned to the second gear 11 which cooperates with the air turbine; wherein the first and second generators are connectable to one another via a controllable clutch [note that Lampe would teach using a controllable clutch 16], the first and second generators being driven in an upper load range of the core engine exclusively by the shaft 2 is a natural extension of the teachings of Schutze where the generator 7 is driven exclusively by the shaft; wherein the first and second gears 10, 11 are connected to one another via the controllable clutch and the freewheel 14 decouples the air turbine.

Allowable Subject Matter

4. Claims 33, 34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The

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Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is
571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer, can be reached at 571-272-7118. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>

| | | |
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